

Clinicopathological and Radiological Features of Pulmonary Squamous Cell Carcinoma Showing Spontaneous Shrinkage

Department of Thoracic Surgery, Juntendo University School of Medicine, Tokyo, Japan

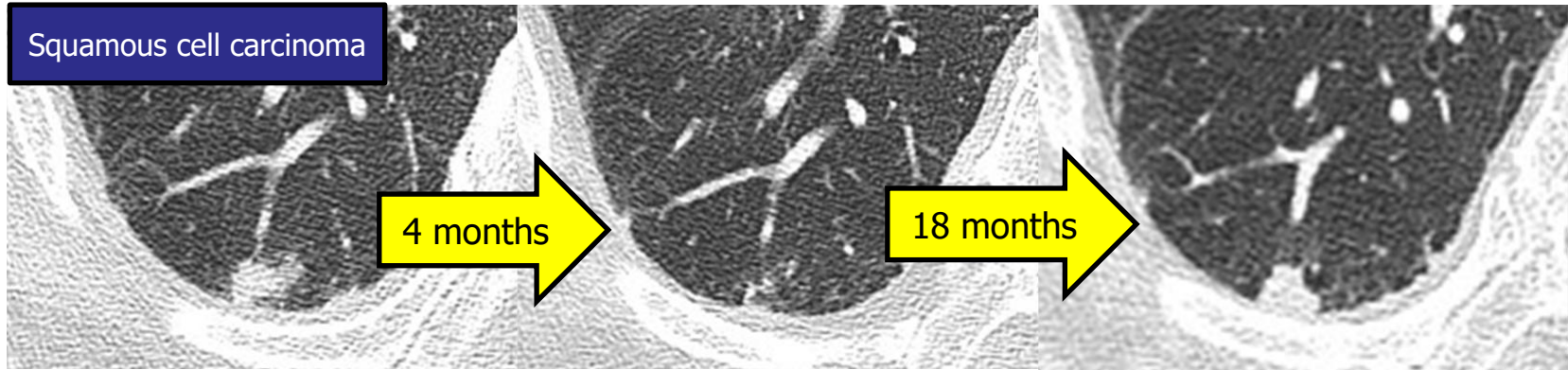
Kana Kinjo, Aritoshi Hattori, Isamu Watanabe, Mariko Fukui, Takeshi Matsunaga,
Kota Imashimizu, Kazuya Takamochi, Hisashi Tomita, Kenji Suzuki

Presenting author: Kinjo Kana

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Background

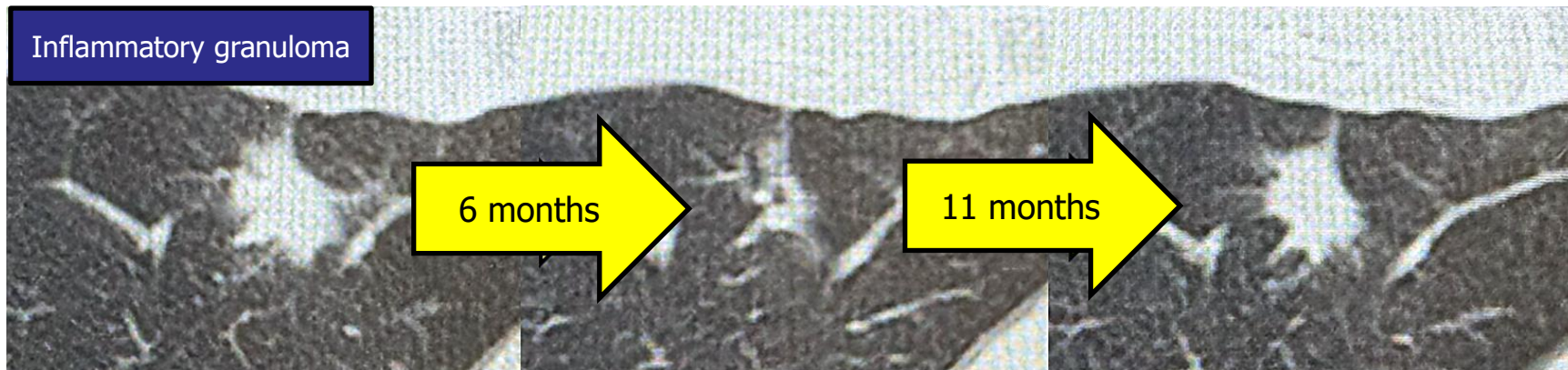
- Some pulmonary lesions decrease in size or change morphology on serial CT.
- Such changes may mimic inflammatory nodules and complicate the diagnosis of primary lung cancer.



Key clinical message : Tumor shrinkage does not exclude malignancy.

Objective

- To characterize the clinical, radiological, and pathological features of pulmonary squamous cell carcinoma showing spontaneous shrinkage or morphological change over time.



Key clinical message : Tumor shrinkage does not exclude malignancy.

Study design

- Retrospective single-center study
- March 2009–May 2025
- 5,941 pulmonary resections
- **21 cases** with spontaneous shrinkage $\pm$ subsequent regrowth on serial preoperative CT
- Clinical, radiological, and pathological characteristics were reviewed

Results

Patients' characteristics	n=21
Age (y, median)	71 (52-83)
Male: n (%)	20 (95)
Heavy smoker (B.I. $\geq$ 600) : n (%)	19 (90)
CCI* ¹ ($\geq$ 3) : n (%)	19 (90)
Emphysema : n (%)	17 (81)
Interstitial pneumonia : n (%)	13 (62)
CPFE * ² : n (%)	21 (100)
FEV 1.0% (%)	67.7 (44.6-84.5)
%VC (%)	97.9 (58.3-137)
%DLCO (%)	56.8 (29.0-83.1)

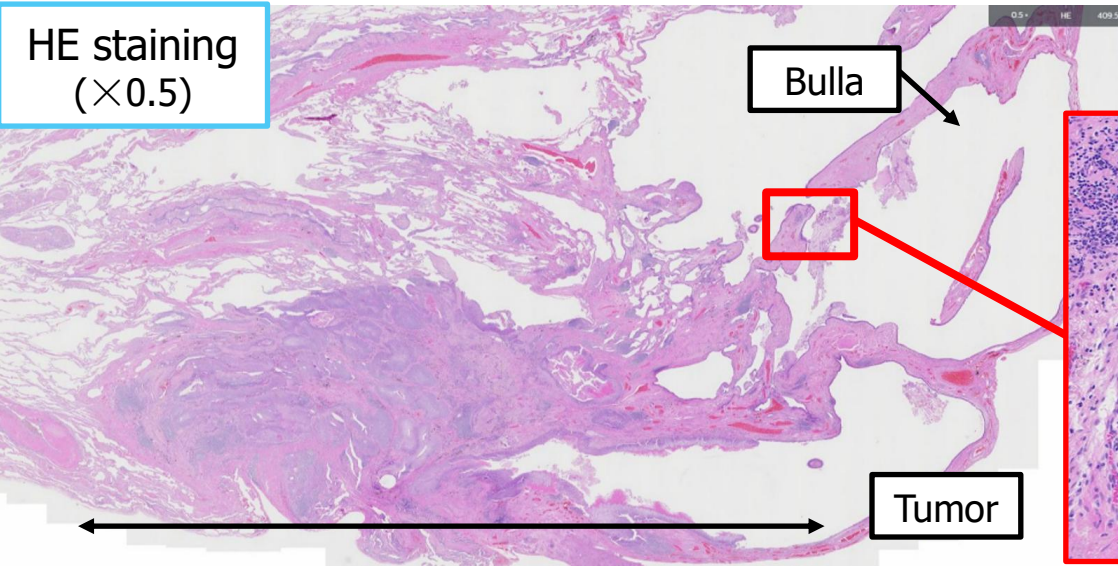
Radiological findings	n=21
Pure solid tumor : n (%)	17 (81)
Presence of cavity : n (%)	3 (14)
Shrinkage size (mm)	6 (2-24)
Morphology change : n (%)	19 (90)
Duration of shrinkage (months, median)	2 (1-5)
Regrowth: n (%)	10 (48)
Duration of regrowth (months, median)	6 (1-12)
Bronchoscopic biopsy : n (%)	9 (43)

*1 CCI : Charlson comorbidity score

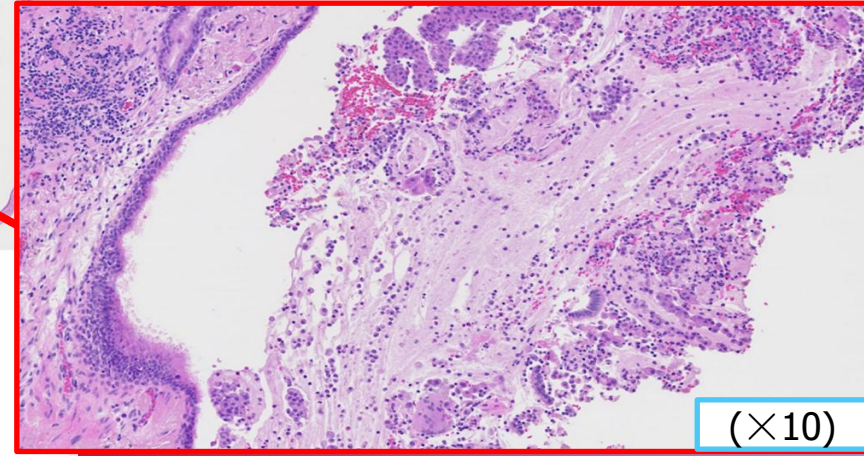
*2 CPFE : Combined pulmonary fibrosis and emphysema

Results

Pathological findings	n=21		n=21
pStageIA1/IA2/IA3/ IB/IIB/IIIA/IV : n (%)	3/5/1/8/1/2/1 (14/24/5/38/5/9/5)	Infiltration of inflammatory cells: n (%)	5 (24)
Upstaging : n (%)	9 (43)	Necrosis : n (%)	8 (38)
Upstaging due to T factor : n (%)	9 (100)	Fibrosis : n (%)	5 (24)



Infiltration of lymphocytes
→ Possibility of changes after pneumonia



Discussion

- Tumors in **male heavy smokers with emphysema or interstitial pneumonia** may show rapid changes in size and morphology, mimicking inflammatory nodules.
- These changes may be associated with **inflammatory cell infiltration, necrosis, and fibrosis** in the surrounding lung.
- As tumors may extend along the abnormal background lung, a surgical procedure that ensures an adequate resection margin should be selected.

Conclusion

- In patients with emphysema or interstitial pneumonia, lung cancer may show rapid changes in size and morphology, making it difficult to distinguish from inflammatory nodules.
- Even when a pulmonary lesion decreases in size, **careful longitudinal assessment is essential**, and **surgery should be considered at an appropriate time when malignancy remains suspected**.

Key clinical message : Tumor shrinkage does not exclude malignancy.